



NTMP Monitoring

**NCRWQCB and CAL FIRE
MSG Meeting
November 16, 2011**

Outline

- I. Background Information
- II. Purpose
- III. Methods
- IV. Locations
- V. Examples
- VI. Preliminary Results
- VII. Next Steps...

Background Information

- Nonindustrial Timber Management Plans (NTMPs) are:
 - Evaluated and approved by CAL FIRE when deemed complete and adequate.
 - Limited in size to 2,500 acres or less.
 - Limited in scope to “light touch forestry” (no clear cutting).
 - Perpetual, given certain requirements.
 - Must comply with the NTMP provisions and applicable Forest Practice Rules (FPRs) .
 - Must comply with other state and federal laws and regulations, such as the Endangered Species and the Clean Water Acts.

Background Information

- Landowners with NTMPs are required to submit NTOs (Notices of Timber Operations) before commencing operations.
- CAL FIRE inspections and enforcement commence with the start of operations and continue through the erosion control period. (Inspections are also conducted when illegal activity is suspected.)
- Many approved NTMPs have no NTOs or very infrequent NTOs.
- CAL FIRE does not conduct inspections on approved NTMPs that have never had an NTO or outside of the operations and erosion control periods.

Background Information

- On June 4, 2009, the Regional Water Board adopted Order No. R1-2009-0038, Categorical Waiver of Waste Discharge Requirements for Discharges Related to Timber Harvest Activities on Non-Federal Lands in the North Coast Region (Timber Waiver).
- The Timber Waiver includes conditions for controlling sediment discharges and temperature increases that also implement TMDLs in impaired waterbodies throughout the North Coast region.
- It includes updated and additional conditions for **NTMPs**, including those that were previously enrolled under the Categorical Waiver, Order No. R1-2004-0016.

Background Information

- Three petitions for review were filed with the State Water Resources Control Board.
- The RWQCB did not intend for the Timber Waiver to create unnecessary regulatory burdens on CAL FIRE or NTMP landowners, or to create conditions that are duplicative of adequately-protective Forest Practice Rules.
- The Regional Water Board adopted Order No. R1-2011-0038, that **stayed the NTMP provisions** in Order No. R1-2009-0038, to allow Regional Water Board staff to review the protection levels being applied to NTMPs.

3 Regional Water Board **Investigations**

- **File review:**
 - to evaluate how older NTMPs are updated in accordance with revised Forest Practice Rules.
- **Gap analysis:**
 - to identify sections of the Forest Practice Rules that are inadequate to protect water quality.
- **Field review**

Purpose of NTMP Monitoring

- To assess whether Use of Erosion Control Plans and/or Road Plans are necessary for NTMPs in order to meet water quality standards.
- Collect field observations on the frequency of sediment discharge, or the potential of sediment discharge, from stream crossings and logging roads within NTMPs.
- This project is being conducted by the Timber Harvest/Non-point Source Division of the NCRWQCB in cooperation with CAL FIRE.



Training NTMP to Refine Monitoring Forms and Procedures

1-07NTMP-016
SON

June 29, 2011



The NTMP has an ECP, but an NTO has yet to be carried out for the plan.

Methods

- **Over 500 NTMPs in the North Coast Region.**
- **List of 131 NTMP NTOs submitted from 11-01-2007 to 7-17-2010 (period when CAL FIRE has jurisdiction for site inspection) in the North Coast Region. Randomized list produced by CAL FIRE staff.**
- **2 tiers for random NTMP NTO selection:**
 - **10% tier (13 NTMP NTOs) were completed by Oct. 31, 2011.**
 - **20% tier (26 NTMP NTOs total) to be completed by Dec. 31, 2011.**
- **Monitoring only completed on NTMP NTOs that have overwintered at least one year to test effectiveness of practices.**

Methods

- Regional Water Board staff wanted to inspect older, inactive NTMPs.
- Additional non-random NTMPs monitored when permission granted by landowner and RPF.
 - Selection bias a concern for these older plans.

Methods

- North Coast Regional Water Board Forms:
 - Stream Crossing Effectiveness Form
 - (slightly modified from FORPRIEM)
 - Road Effectiveness Form
 - Overall Rating Form
- Note: selection of stream crossings and road segments is not random.

Methods

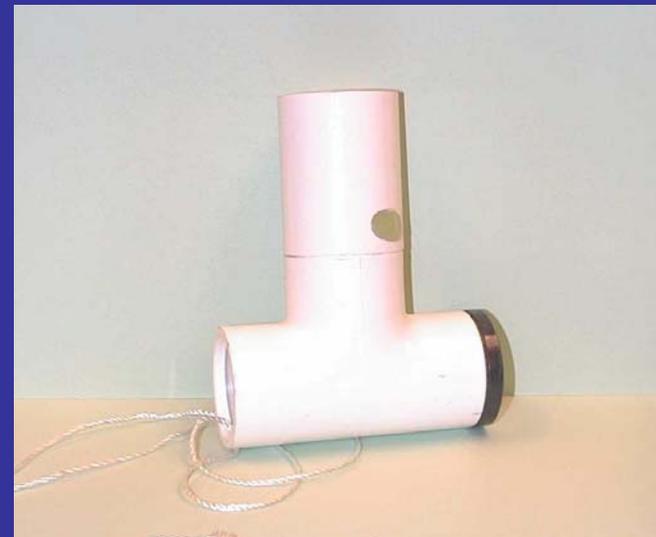
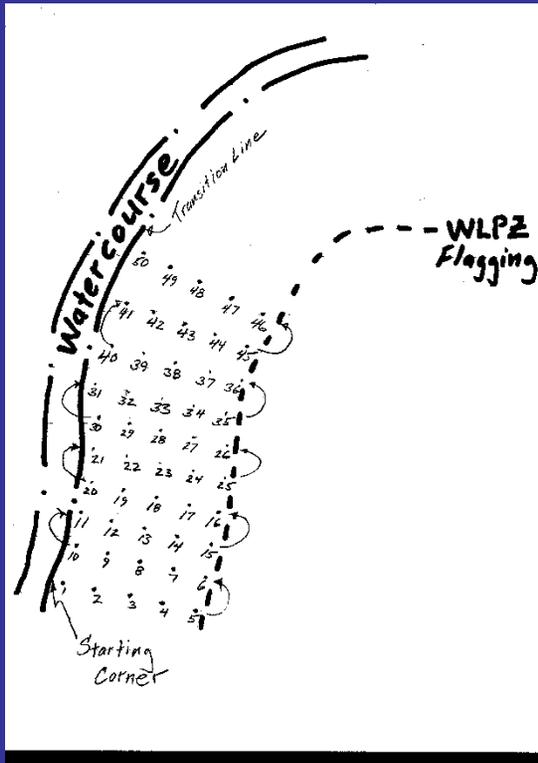
- CAL FIRE FORPRIEM Forms:
 - Road Implementation and Effectiveness
 - 660 ft randomly located transect
 - Watercourse Crossing Implementation and Effectiveness
 - 2 randomly located crossings
 - WLPZ Canopy and Erosion Features

Methods

- **Random vs Non-random selection of stream crossings and road segments**
- **Random selection of stream crossings allows the extrapolation of the weighted results to all stream crossings.**
- **Non-random selection of streams crossings will allow the identification of how many NTMPs have erosion problems.**

FORPRIEM WLPZ Canopy

- Randomly located 200 ft WLPZ segments for Class I and II watercourses.
- A 50 point grid pattern and a sighting tube are used for measurement.



Sighting Tube

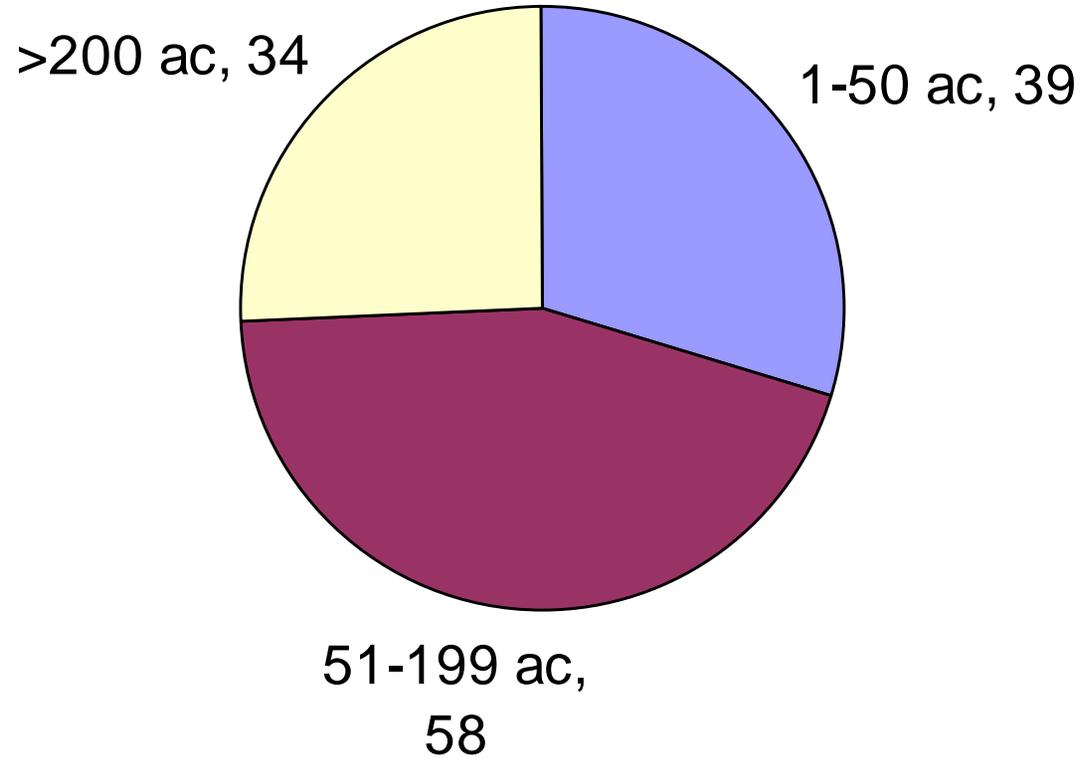
Methods

- Field Procedure for randomly selected NTMPs:
 - Review NTMP; determine if it has an ECP.
 - Review maps; select FORPRIEM random 660 ft road segment, 2 random crossings, randomly located 200 ft WLPZ segment.
 - NCRWQCB and CAL FIRE staff jointly complete FORPRIEM forms for randomly located road and crossing sites.
 - CAL FIRE staff complete FORPRIEM random WLPZ segment.
 - NCRWQCB staff complete forms for non-random crossings (4-8 total) and observe several additional non-random road segments.
 - NCRWQCB and CAL FIRE staff take digital photos of sites.
 - NCRWQCB and CAL FIRE staff join to fill out the WB road effectiveness form and the WB overall rating form.

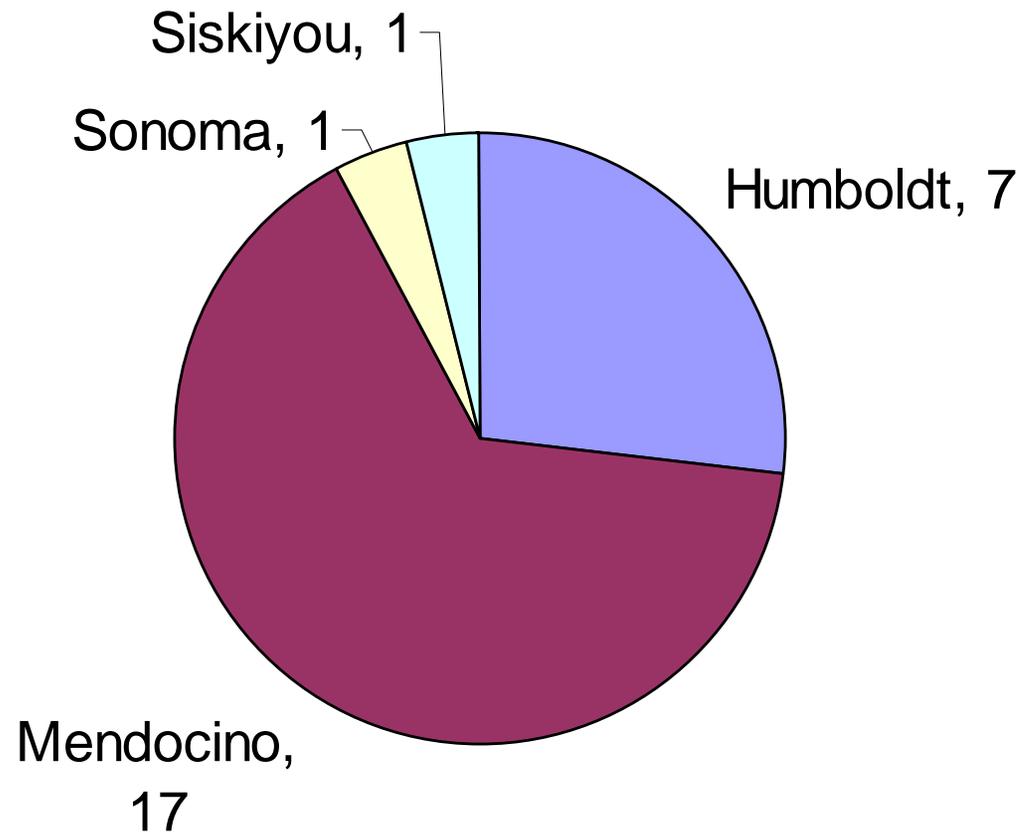
Methods

- Field Procedure for non-randomly selected NTMPs:
 - No FORPRIEM monitoring by CAL FIRE staff.
 - NCRWQCB staff complete 4-8 (if available) crossing effectiveness forms.
 - NCRWQCB staff complete road effectiveness and overall rating form.

Size of 131 Random NTMP NTOs



Location of NTMPs for the 20% Random Sample



Methods

- **Quality Assurance Plan** assessing the use of Erosion Control Plans for Non-Industrial Timber Management Plans [QAPjP-001] approved by SWRCB on July 29, 2011.

Examples of NTMP NTO Monitoring

**1-97NTMP-001 HUM August 10, 2011
Diamond R Ranch NTMP near Rio Dell and Scotia**



**Filling out Stream Crossing Effectiveness Form at temporary crossing No. 6
Price Creek, Class I watercourse**

**Showing to the landowner/LTO
how the road monitoring forms are
filled out**



**Significant cow trampling at
both approaches for crossing
No. 4**





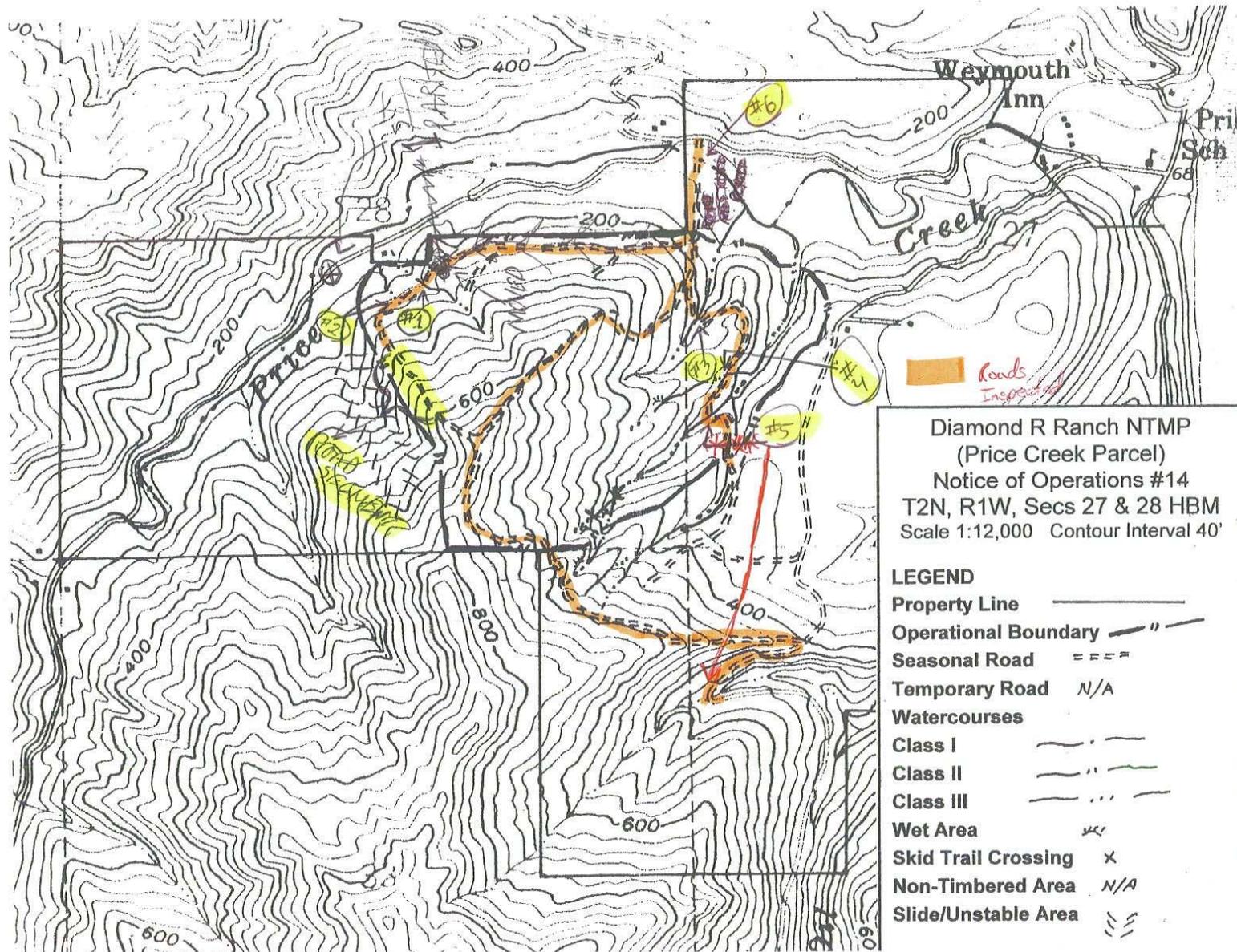
Randomly located
Class II WLPZ
segment used for
canopy measurement
Total canopy >95%

**Matt Buffleben measuring the culvert diameter (48 in) at crossing No. 5
Several problems were noted at this non-random crossing**



Map Showing Locations of Crossings and Road Segments Observed

Roads and crossings were both rated as a moderate problem to water quality, biggest problem noted was significant cattle impacts, especially at crossing approaches





Crossing "A" (48" CMP) evaluation by NCRWQCB and CAL FIRE staff; erosion at outlet due to cattle trampling

**Below crossing “A” outlet—
Class I channel impacts due
to cattle**



Non-random crossing “F” (12” culvert on a Class II watercourse) —significant damage from cattle trampling above the culvert inlet; several major effectiveness problems noted at this crossing





**Random
crossing “D” –
36 inch CMP**

**Major
problems:**

**-Significant
scour at the
outlet**

**-Diversion
potential**



Fill slope tension cracks noted on road segment beyond crossing "D."



Road fill slope erosion (60 ft) noted along the 660 ft randomly located road segment for FORPRIEM

Low risk of delivery to a watercourse due to road location

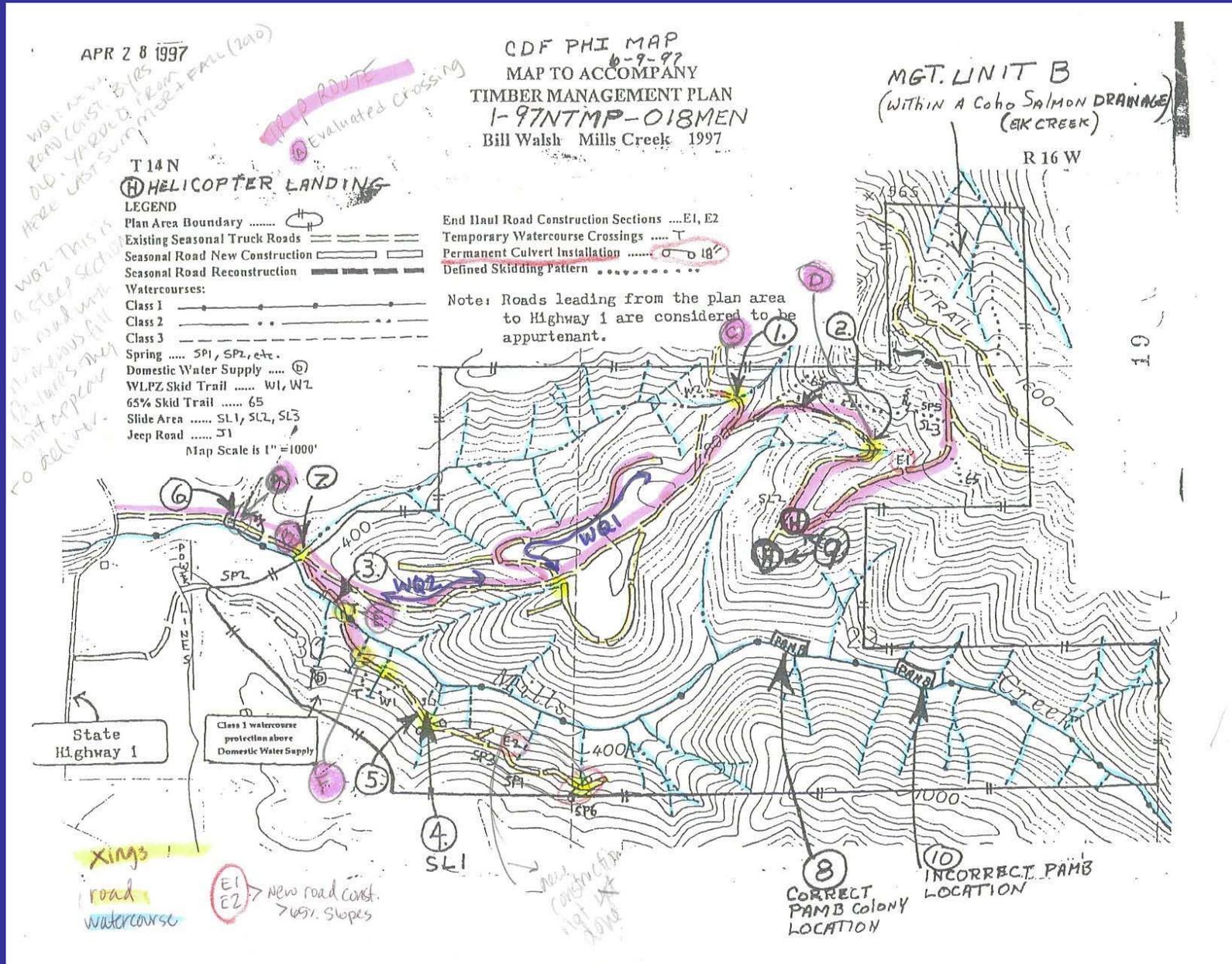
**Non-random road
segment evaluated
without problems**





**Ken Margiott, CAL FIRE,
measuring total canopy for
FORPRIEM (92%). WLPZ
harvesting as part of the NTMP
NTO had occurred.**

**NTMP map showing the road segments and crossings evaluated;
Roads were rated as a minor problem to water quality and crossings were
found to be a moderate problem**





**1-05NTMP-017 SON
Gray NTMP near
Annapolis**

September 8, 2011

**Observing a road
segment**

A photograph of a dirt road or path winding through a dense forest. The path is covered in dry leaves and small twigs. Sunlight filters through the trees, creating dappled light on the ground. The trees are tall and thin, with a mix of green and brown foliage. The overall scene is a natural, wooded area.

Roads were located near ridges with few watercourses present.

Roads had few erosion features.

Roads were rated as a minor water quality impact; watercourse crossings were rated as having no potential for sediment discharge.



**Non-Random
NTMP 1-01NTMP-
023 MEN**

**Greenwood Road
near Philo**

August 29, 2011

**NTOs were
operated on in
2001 and 2002.**

**8 watercourse
crossings were
evaluated, with
only minor
impacts to water
quality.**



**Non-random NTMP 1-
01NTMP-023 MEN**

**Seasonal roads were rated
as a minor impact to water
quality; no large erosion
events were noted.**

Non-Random NTMP Inspections

1-02NTMP-020 MEN

1-06NTMP-027 MEN

September 23, 2011



18" Plastic Pipe, Class III

Dominik Schwab, CAL FIRE
Carey Wilder, WQ
Craig Blencowe, RPF

18" Metal Pipe, Class III



NTMP Monitoring Data and Forms

- See the following ftp site for:
 - NCRWQCB data forms and photos
 - CAL FIRE FORPRIEM forms and photos
 - NCRWQCB blank forms, QAP, procedures
 - CAL FIRE FORPRIEM blank forms and procedures
- <ftp://frap.cdf.ca.gov/pub/incoming/IMMIP/NTMP%20Monitoring%202011/>

Preliminary Results

1. FORPRIEM
2. NCRWQCB

FORPRIEM Preliminary Results

WLPZ Canopy

	Class I & II WLPZ Percent Total Canopy	Class I WLPZ Percent Total Canopy	Class II WLPZ Percent Total Canopy
North Coast Basin NTMP/NTOs	<p>92%</p> <p>n = 13 Var. = 35.2 S.D. = 5.93 Ave. = 92.3 Median = 92 1st Q = 90 3rd Q = 98 Max. = 100 Min. = 80</p>	<p>87%</p> <p>n = 3 Var. = 49.3 S.D. = 7.02 Ave. = 86.7 Median = 86 1st Q = 83 3rd Q = 90 Max. = 94 Min. = 80</p>	<p>94%</p> <p>n = 10 Var. = 35.2 S.D. = 4.71 Ave. = 94.0 Median = 92 1st Q = 92 3rd Q = 98 Max. = 100 Min. = 92</p>

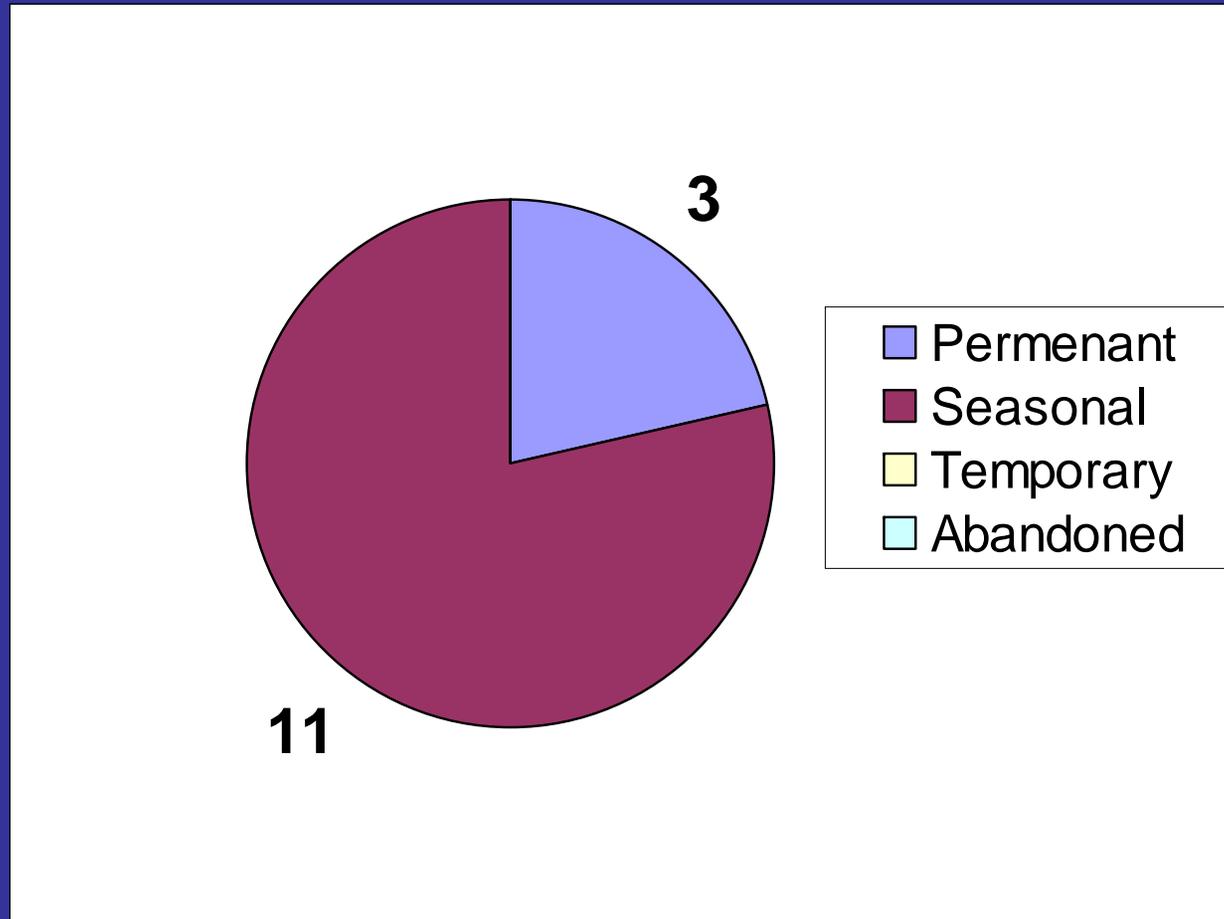
FORPRIEM Preliminary Results

Roads

- 14 randomly selected 1/8th mile (660 foot) road segments in the monitoring sample thus far.
- Total length 9,240 feet.
- All existed prior to current NTMP/NTO.
- No abandoned roads in the sample thus far.

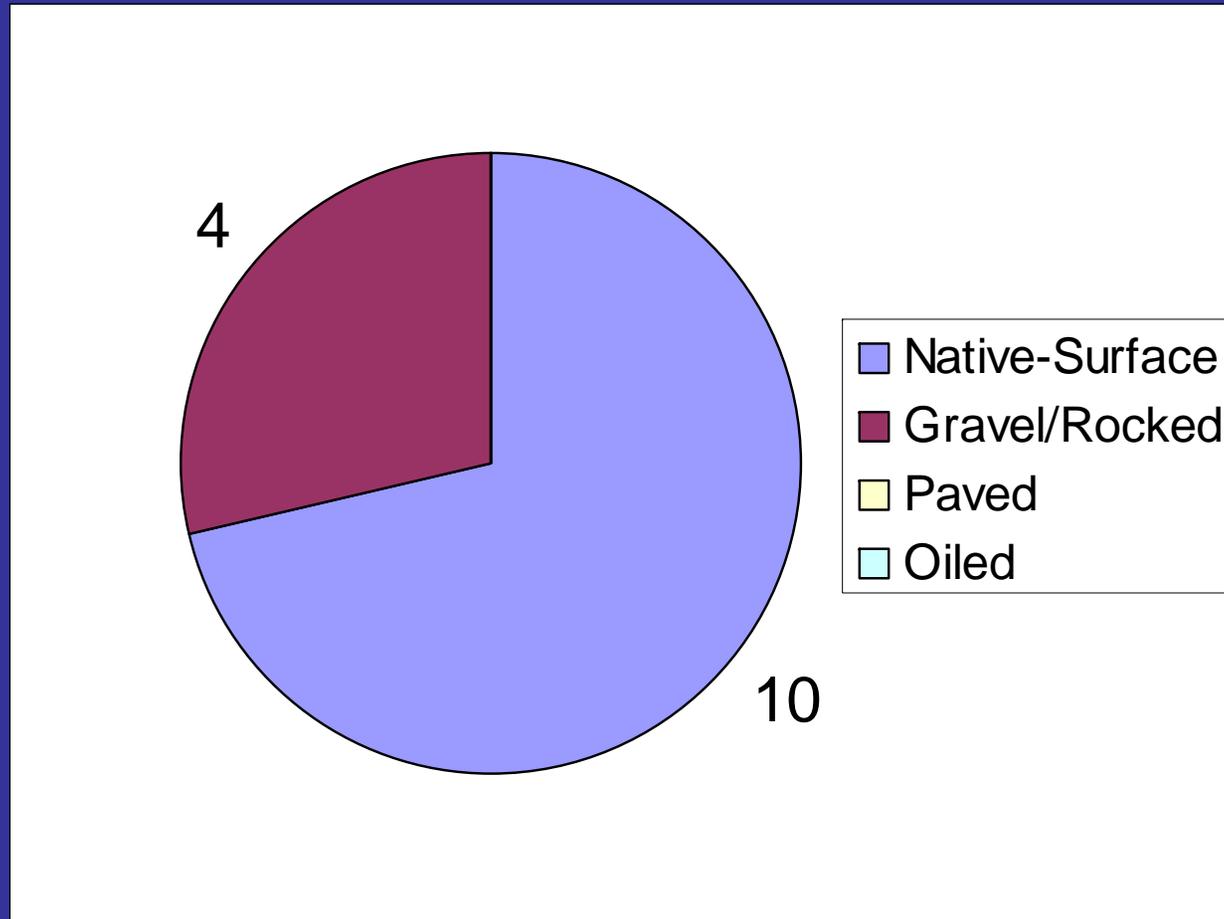
FORPRIEM Preliminary Results

Road Types



FORPRIEM Preliminary Results

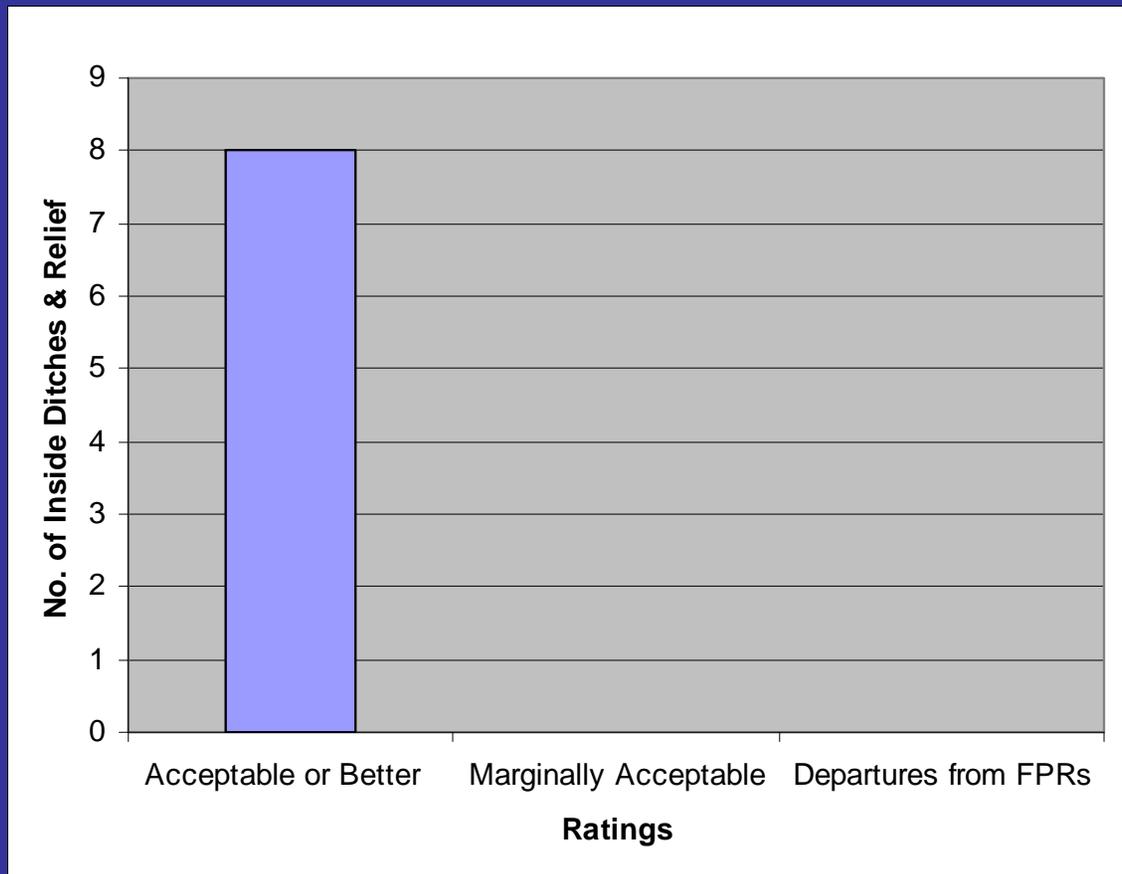
Road Surfaces



FORPRIEM Preliminary Results

Road FPR Implementation:

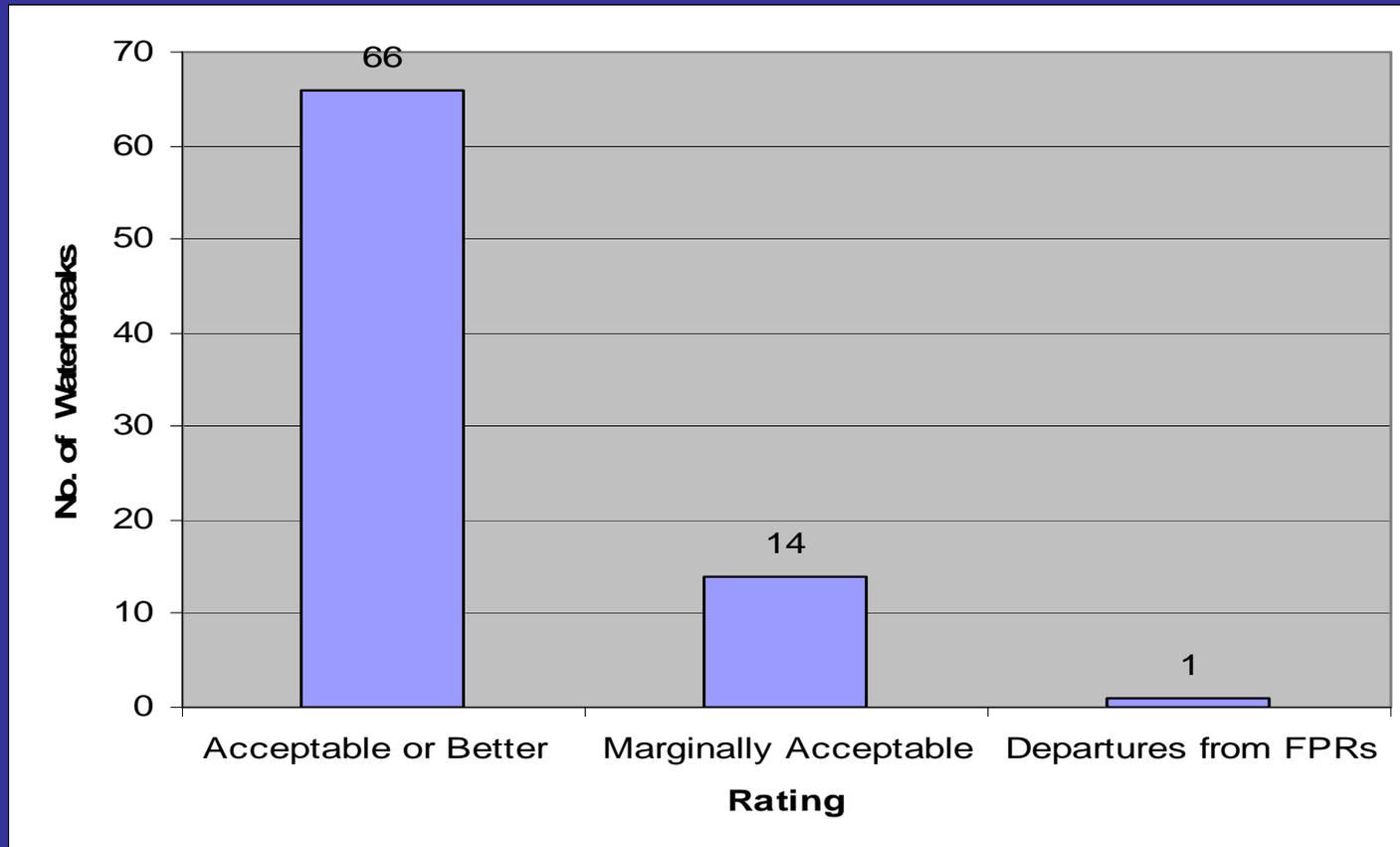
Inside Ditches and Ditch Relief



FORPRIEM Preliminary Results

Road FPR Implementation:

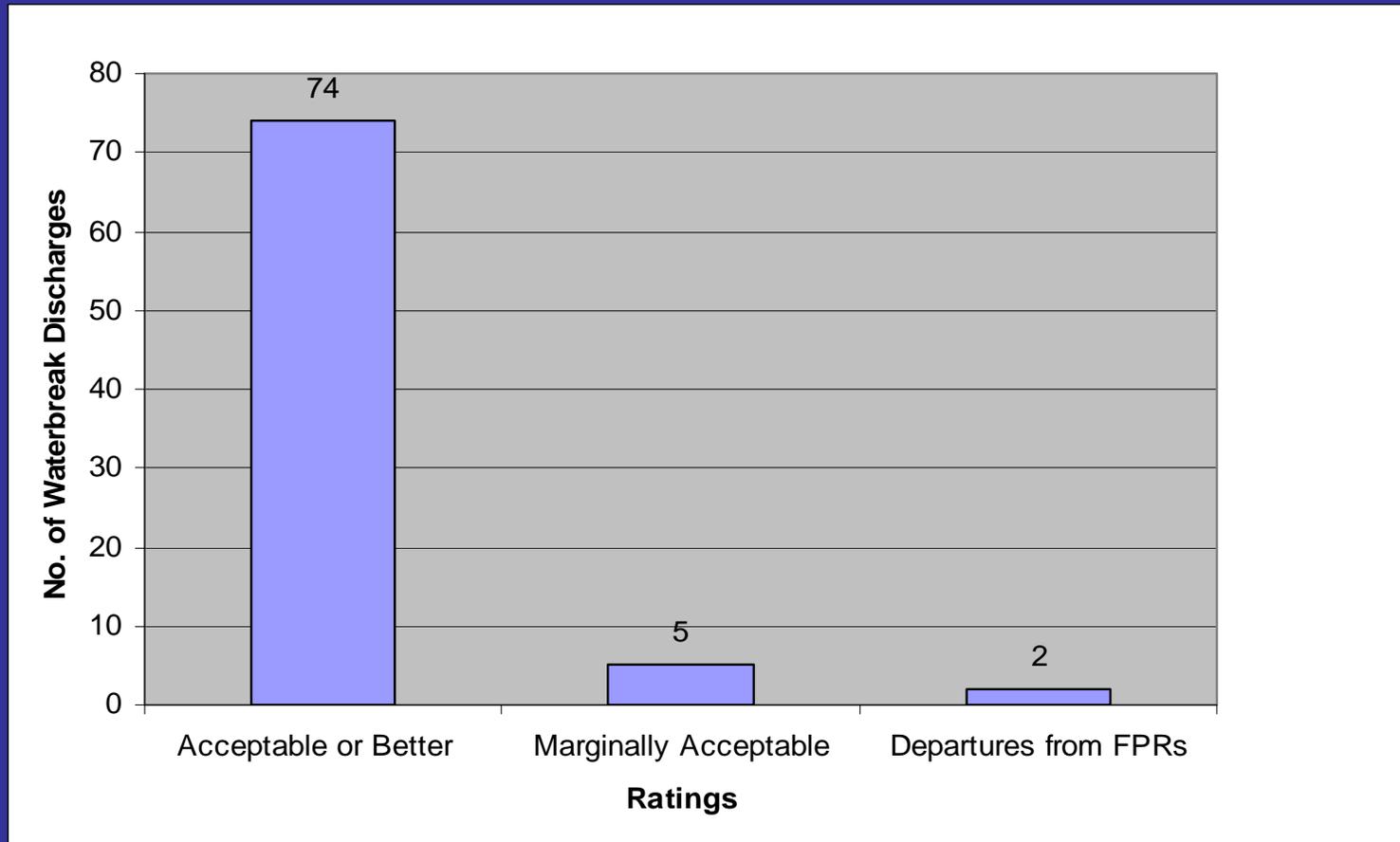
Waterbreak Construction



FORPRIEM Preliminary Results

Road FPR Implementation:

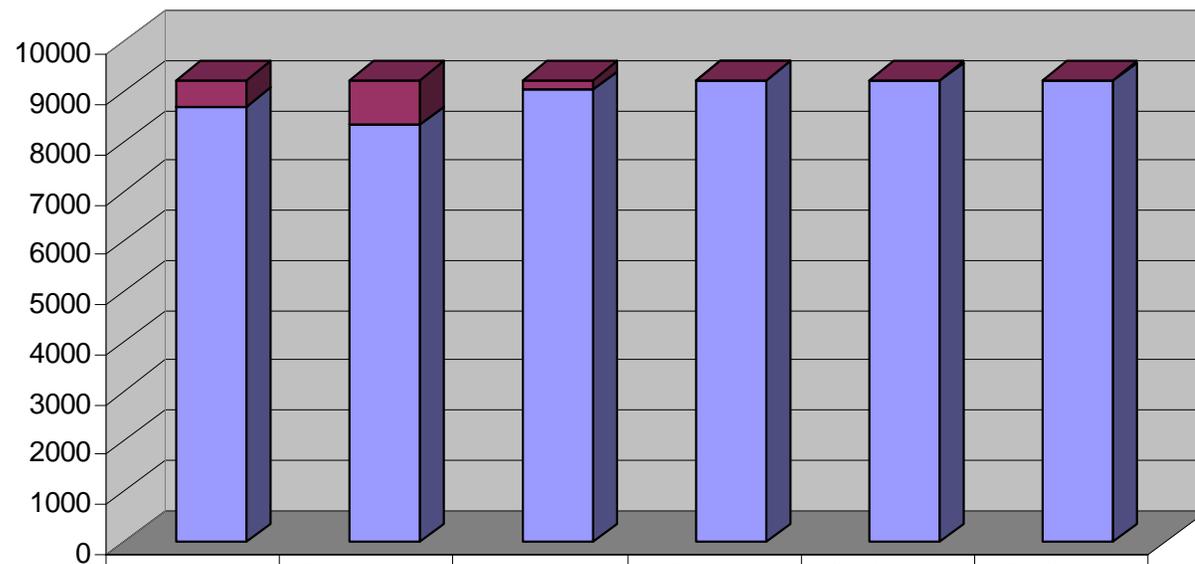
Waterbreaks Discharge into Cover



FORPRIEM Preliminary Results

Road Effectiveness:

Erosion/Sediment Transport



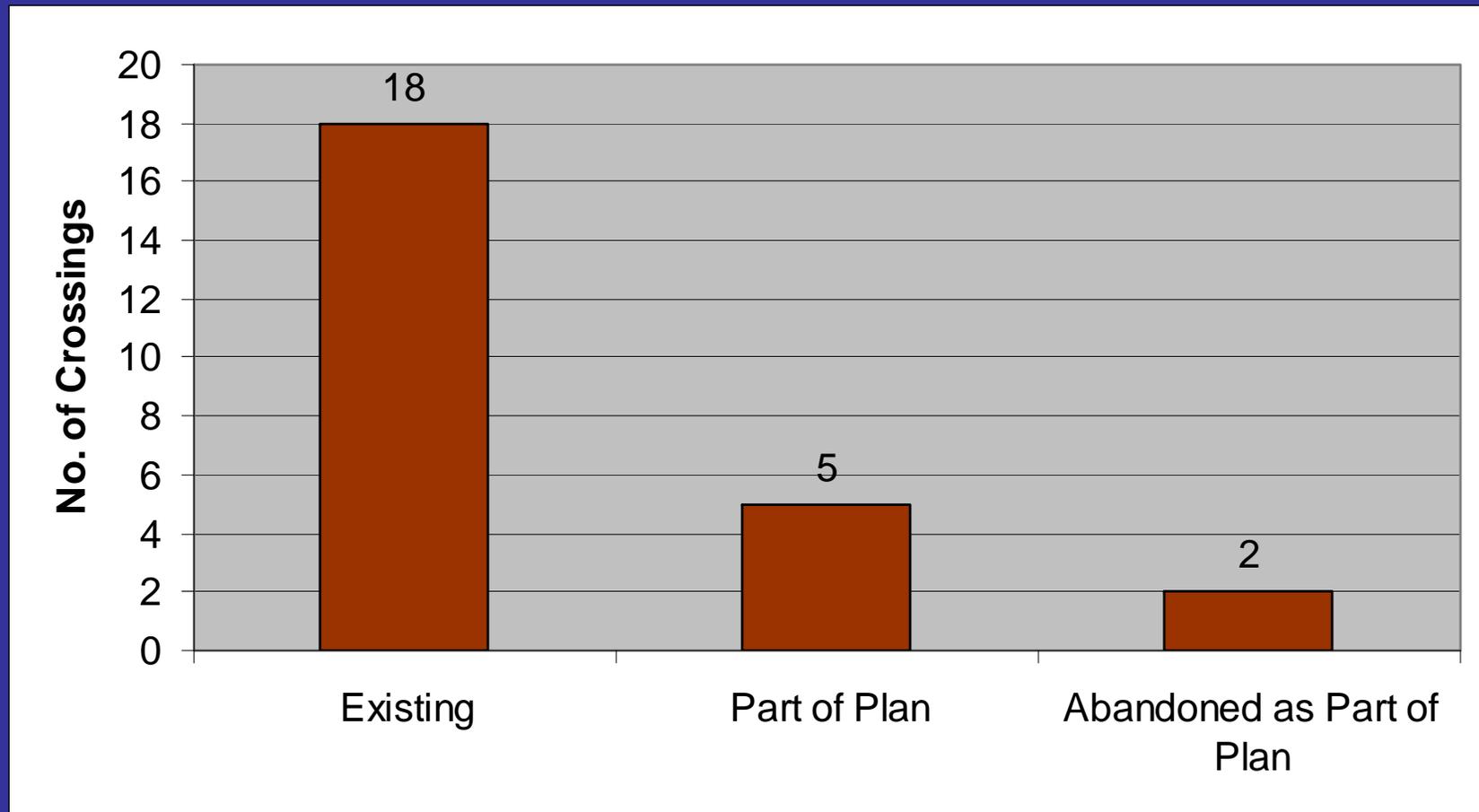
	Erosion on Cut Slope	Erosion on Road Surface	Erosion on Fill Slope	Erosion on Downslope of Fill	Sediment Transport Beyond	Sediment Transport to Channel
Linear Feet With Erosion	530	890	200	0	10	10
Linear Feet Without Erosion	8710	8350	9040	9240	9230	9230

FORPRIEM Preliminary Results Watercourse Crossings

- 25 randomly selected watercourse crossings in the monitoring sample to date.

FORPRIEM Preliminary Results

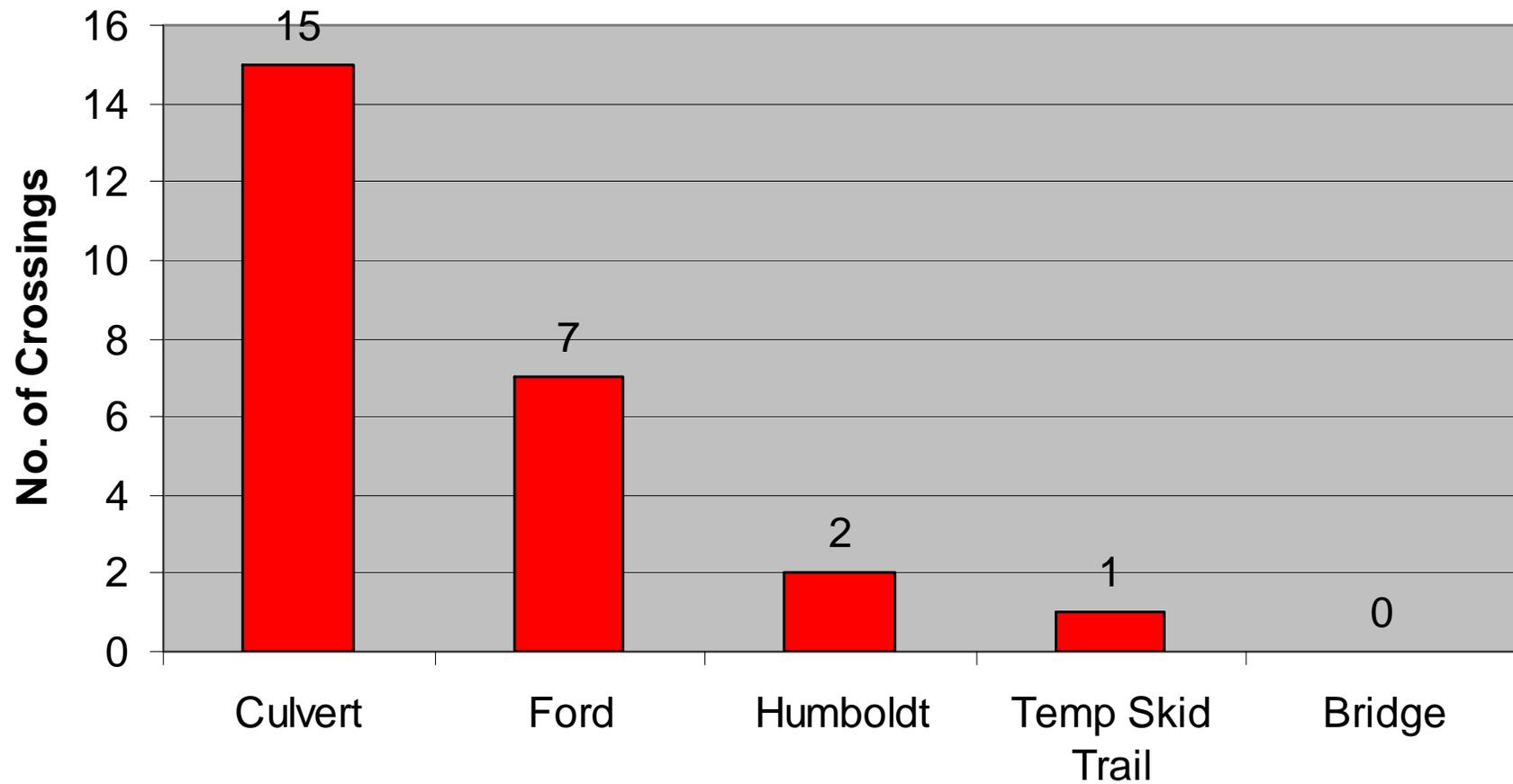
Watercourse Crossings: Construction Date



72% Existing Crossings

FORPRIEM Preliminary Results

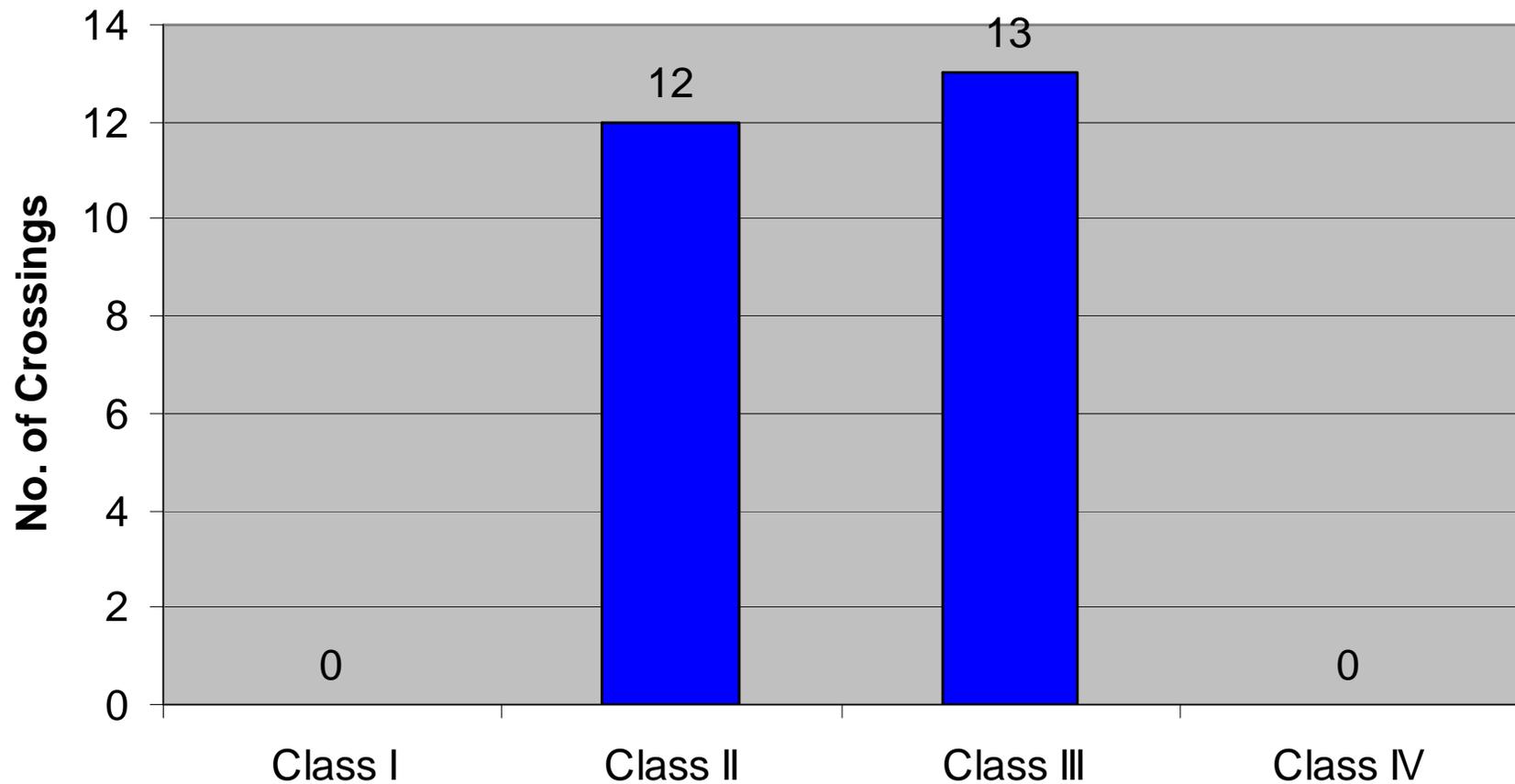
Watercourse Crossings: Crossing Types



25 Crossings Evaluated: 60% culverts; 28% fords

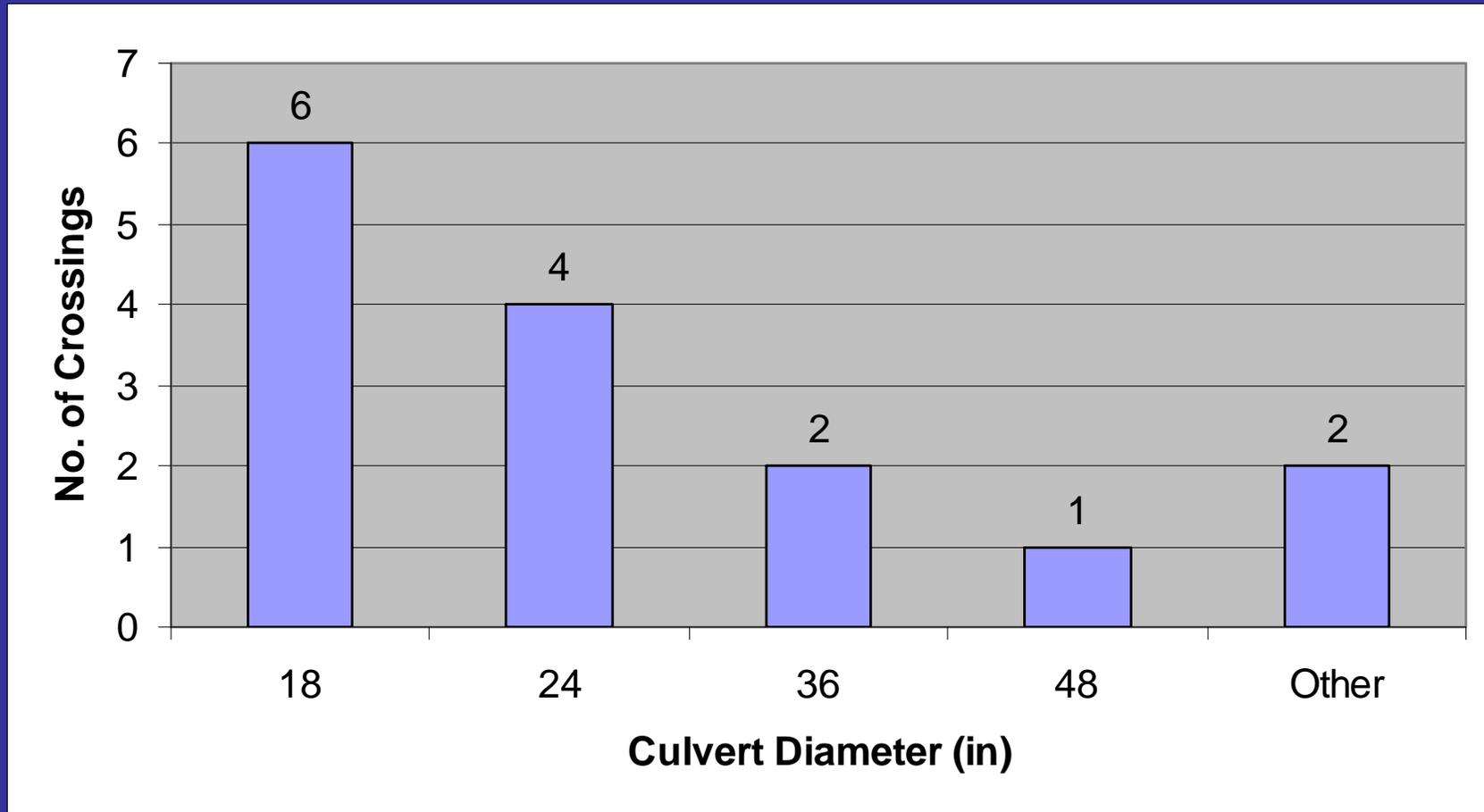
FORPRIEM Preliminary Results

Watercourse Crossings: Watercourse Class



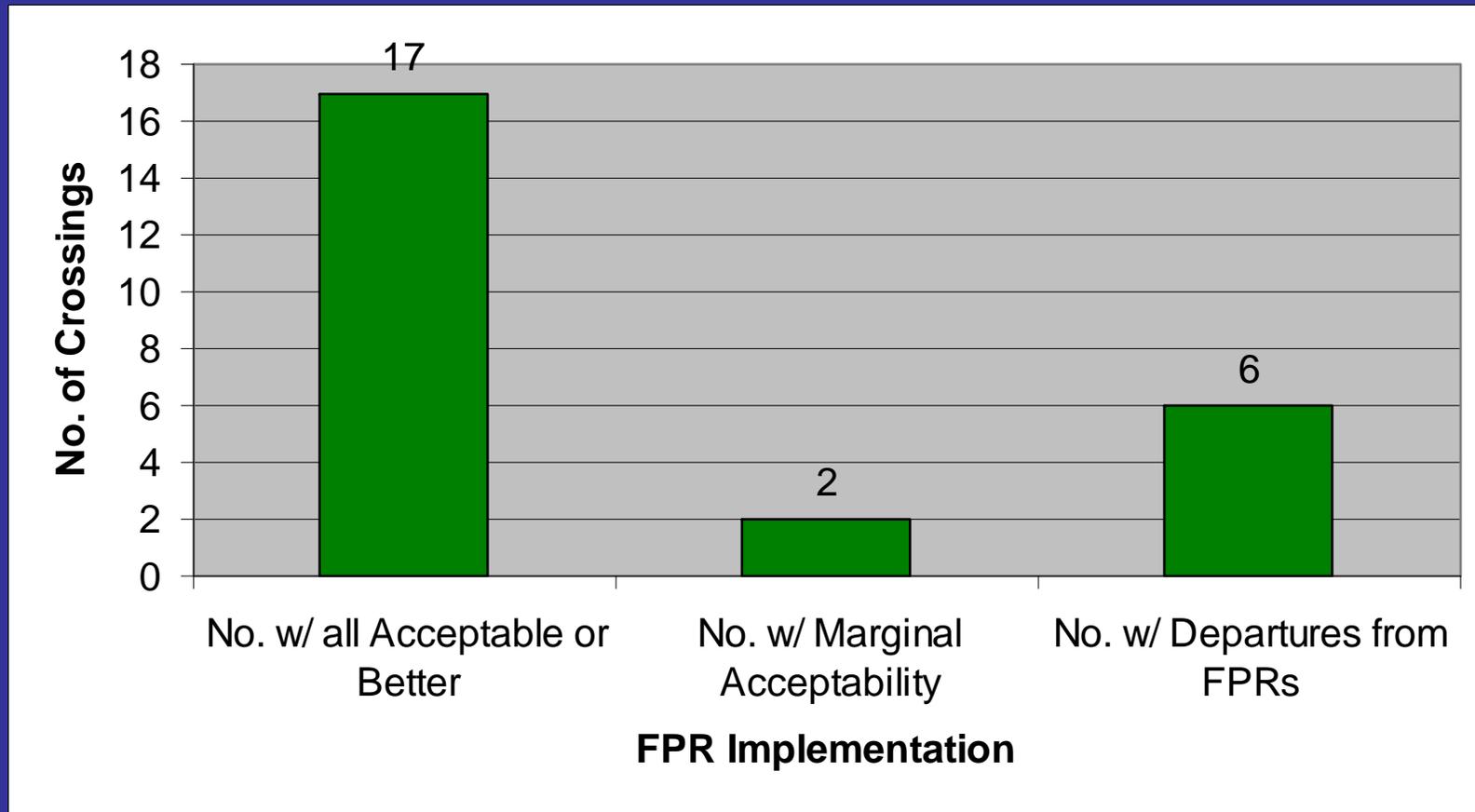
FORPRIEM Preliminary Results

Watercourse Crossings: Culvert Size



FORPRIEM Preliminary Results

Watercourse Crossings: Rule Implementation



68% all acceptable implementation; 8% with marginal only; 24% with Rule departures

MCR: 64% all acceptable; 19% marginal only; 17% one or more Rule departures 58

NTMP 1-98NTMP-008 MEN

Crossing No. 2 -- Humboldt Crossing



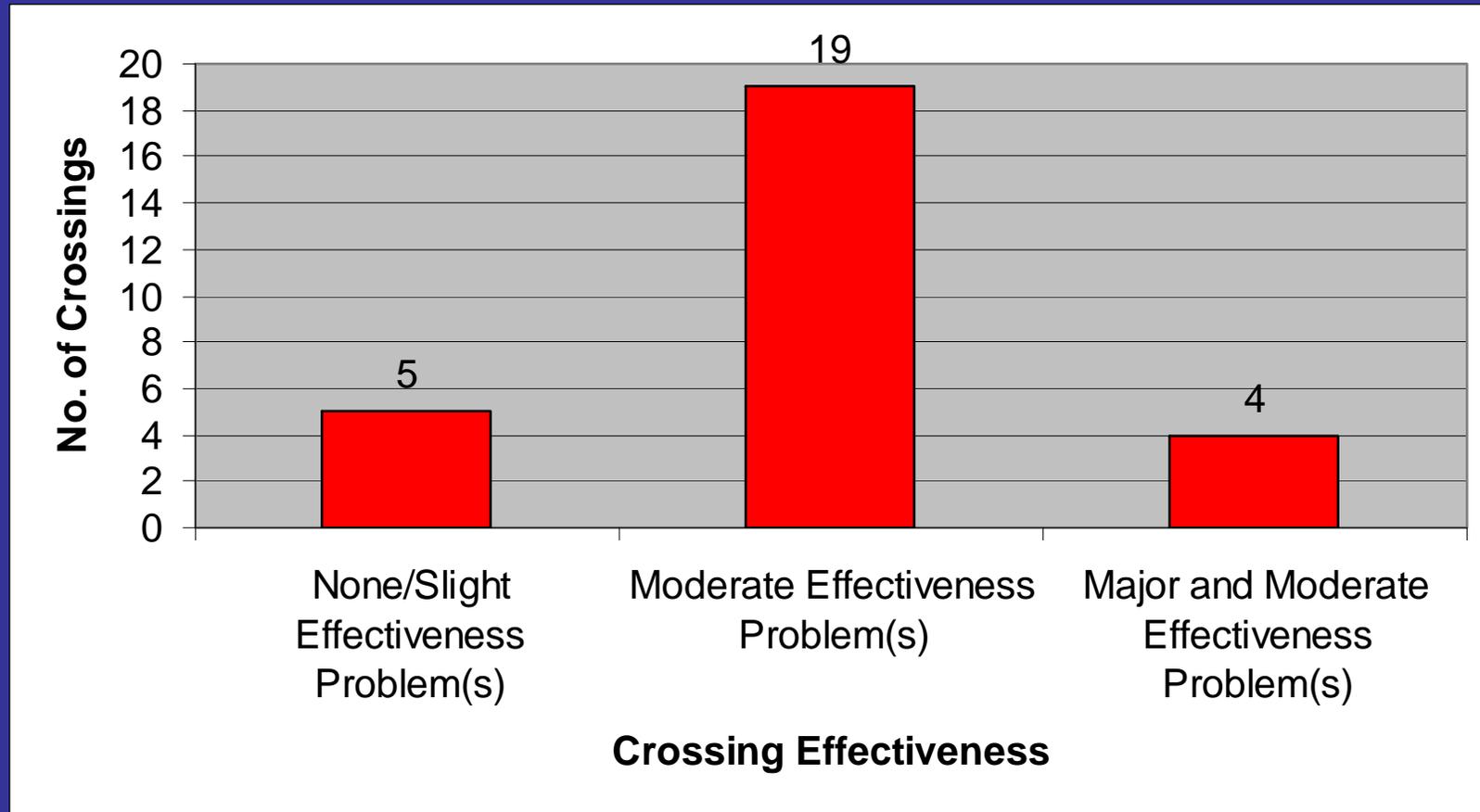
Crossing Inlet



Crossing Outlet

FORPRIEM Preliminary Results

Watercourse Crossings: Effectiveness



21% no effectiveness problems; 79% with moderate problems; 17% with major problems

MCR: 18% of crossings had one or more major problems

FORPRIEM Preliminary Results

Watercourse Crossings: Effectiveness

- **Frequent Effectiveness Problems:**
 - **Scour at Outlet (9)**
 - **Plugging (5)**
 - **Road Rutting (5)**
 - **Cut-off Drainage Structure (4)**
 - **Diversion Potential (4)**

Next Steps...

- **Regional Water Board and CAL FIRE will continue to conduct field surveys until the end of the year.**
- **Regional Water Board staff will propose an extension of the Waiver amendment.**
 - **January Board Meeting**
- **Plan to have workshops in March and April to review results and gather input for changes to the waiver.**